

REMARKS

Claims 1 – 22 are presently pending in the application. Claims 1 and 16 have been amended and claims 17 – 22 cancelled without prejudice. Claims 3, 8, 10 – 12, 14 and 15 stand objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form to include all the limitations of the base claim and any intervening claim. In view of the arguments for patentability set forth below, Applicants respectfully submit that the application is in condition for allowance.

Claim Rejections – 35 U.S.C. § 102(b) and 102(e)

Claims 1 and 2 stand rejected as being anticipated by Gray U.S. Patent No. 1,801,153 (“Gray”). Applicants traverse this rejection and respectfully submit that Gray fails to disclose or suggest the claimed invention.

In accordance with an aspect of the present invention as set forth in representative claim 1, as amended, there is provided a tool for punching a metering orifice extending at an acute angle through a fuel metering disc of a fuel injector along an orifice axis with respect to at least one planar surface of the metering disc, the metering orifice extending between first and second generally planar surfaces spaced along a longitudinal axis of the disc, the tool comprising:

an elongated body extending along a tool axis between a first tool end and second tool end about a tool axis to define a tool perimeter, the first tool end configured to receive a tool punching force, the second end including:

a pilot portion having a first surface disposed on a first plane generally transverse to the tool axis, the first surface including a first surface area offset to the tool axis, *the first surface area of the pilot portion including an area bounded by a first arcuate portion of the perimeter of the second tool end and a first chord connecting the first arcuate portion;*

a main portion having a second surface area greater than the first surface area offset to the tool axis, the second surface area disposed on a second plane *wherein the second surface area of the main portion comprises an area bounded by a second arcuate portion of the perimeter of the second tool end and a second chord connecting the second arcuate portion;* and

a transition portion disposed on a third plane generally oblique to the tool axis, the transition portion intersecting the longitudinal axis and connecting the pilot portion and the main portion.

Claim 1 as amended (emphasis added). Note, the limitations added to claim 1 by this amendment were present in originally presented claim 4, and thus it is believed that this amendment does not raise any new issues after the final rejection of claim 1.

The Examiner contends (Office Action, page 2):

See the Figures where the punching tool 11 is formed with an elongated body having an end that includes a pilot portion with a terminal end (unlabeled), a main portion 21 and a transition portion 20. The terminal end and main portion 21 are shown as being offset relative to the axis of the tool and the main portion is shown to have a greater surface area than the terminal end, as clearly shown in Figure 3. The transition portion 20 is also shown as being planar as evident from Figures 2 and 3. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art..

With respect to Gray, that reference teaches a “pilot portion” 14 including a front face (unlabeled) in the shape of a rectangle (see Fig. 3). This surface does not correspond to the claim limitation of “the first surface area of the pilot portion *including an area bounded by a first arcuate portion of the perimeter of the second tool end and a first chord connecting the first arcuate portion.*” Similarly, Gray fails to disclose or suggest the claimed limitation of “a main portion having a second surface area greater than the first surface area offset to the tool axis, the second surface area disposed on a second plane *wherein the second surface area of the main portion comprises an area bounded by a second arcuate portion of the perimeter of the second tool end and a second chord connecting the second arcuate portion.*” Clearly, the corresponding structure in Gray is the flat face 21 and this does not equate to the second arcuate portion and second chord as called for in amended claim 1. It is axiomatic that in order to support a proper Section 102 rejection, every element in the claim must be found in the cited reference. Not only does Gray fail to disclose these limitations, but there is nothing in this patent

that suggests the claimed configuration. For this reason, it is respectfully submitted that claim 1 is patentable over Gray and that those claims which are dependent on claim are patentable for at least the same reasons.

Claims 1, 2, 4 – 7, 9 and 17 – 20 stand rejected under Section 102(b) as being anticipated by Munechika Japanese Patent Document No. 63-224820 (“Munechika”). Applicants traverse this rejection and respectfully submit that Munechika fails to disclose or suggest the claimed invention.

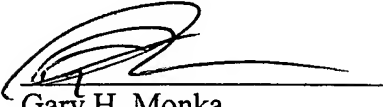
With reference to Figs. 1 – 3 of Munechika, the tool 17 or 33 that is depicted in the drawings does not meet any of the claim limitations discussed above that distinguish the invention from Gray. Specifically, there is no teaching or suggestion here of “the first surface area of the pilot portion *including an area bounded by a first arcuate portion of the perimeter of the second tool end and a first chord connecting the first arcuate portion.*” Neither is there anything corresponding to the claimed limitation of “a main portion having a second surface area greater than the first surface area offset to the tool axis, the second surface area disposed on a second plane *wherein the second surface area of the main portion comprises an area bounded by a second arcuate portion of the perimeter of the second tool end and a second chord connecting the second arcuate portion.*”

Accordingly, it is submitted that independent claim 1 is patentable over Munechika, and that those claims that are dependent on claim 1 are patentable over the cited art for at least the same reasons.

The Examiner is invited to contact the undersigned at (908) 707-1573 to discuss any matter concerning this application.

Respectfully submitted,
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By:

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